

Trees on farms – Agroforestry research at Newcastle

Do trees negatively impact yield?
 Do trees buffer livestock from heat stress?
 Do trees increase biodiversity?
 How do trees grow in farmed land?
 Do we want trees on farms?

Research questions

Shade, sun and yield



LoRaWAN 5G sensor network: Radiation, Temperature, Moisture

Soil quality



pH
 N Total, %
 Organic C
 Available P
 Available K
 Available Mg
 C:N ratio
 Bulk density

Sample and analyse soil twice in the growing season

Tree growth : monitoring with remote sensing



Terrestrial Laser scanning: Height, structure

Aerial imagery (UAVs): Height, Greenness

Farmer views from the Northeast: shared themes

- Preference for livestock – tree systems
- Recognition of need for technical advice: grow trees, monitoring over time for reporting
- Costs of implementation: purchase, planting, protection
- Advice needed on navigation of Incentives

How can trees on farms be integrated into the farm business?

Contacts:

Matt Carr, Remote Sensing Technician, Matt.Carr@newcastle.ac.uk

Prof Marion Pfeifer, Forest Landscape Restoration, marion.pfeifer@newcastle.ac.uk

Dr Rachel Gaulton, Remote Sensing & Tree health, rachel.gaulton@newcastle.ac.uk

Eleanor Durrant, Social aspects of farming systems, Durranteleanor@gmail.com